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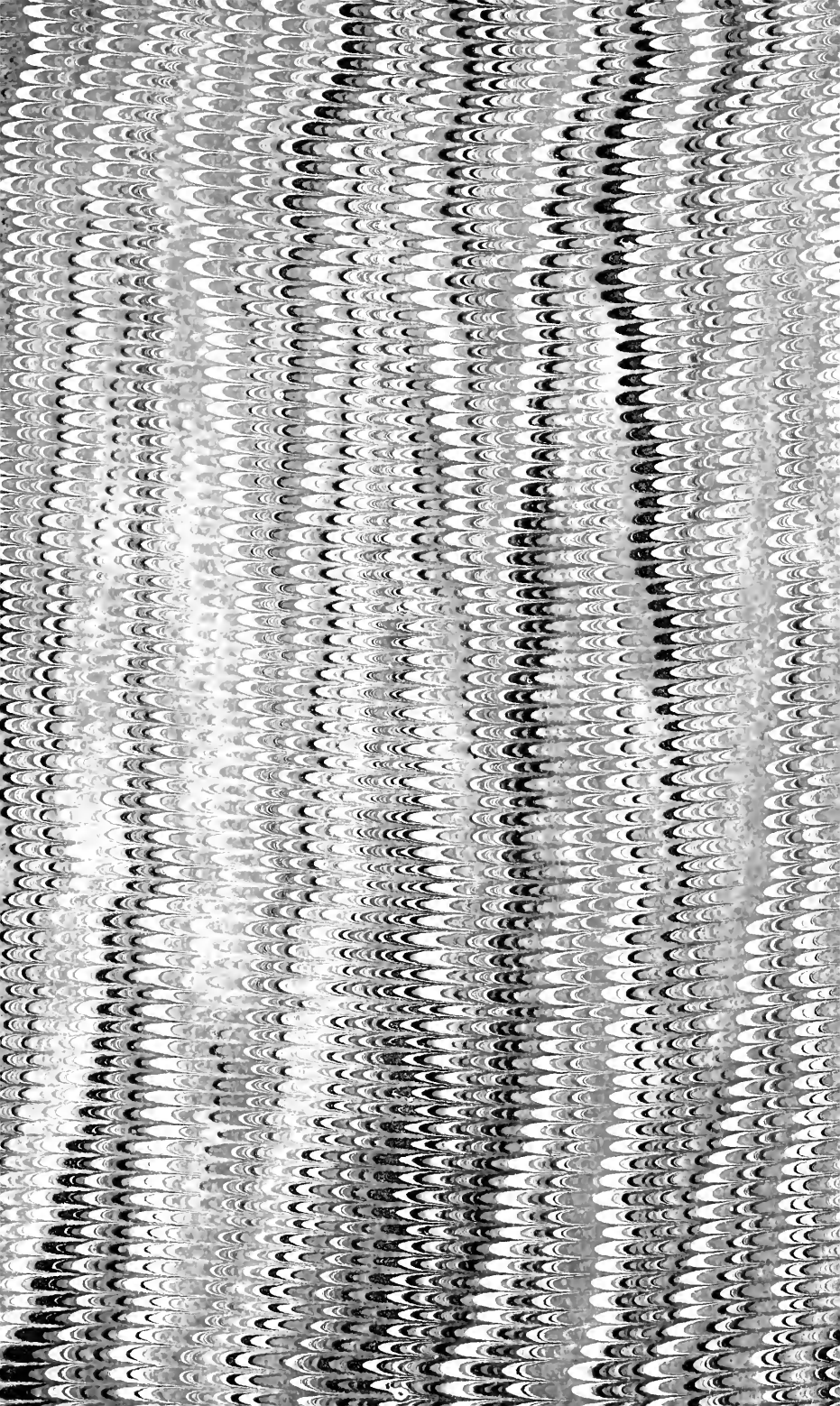
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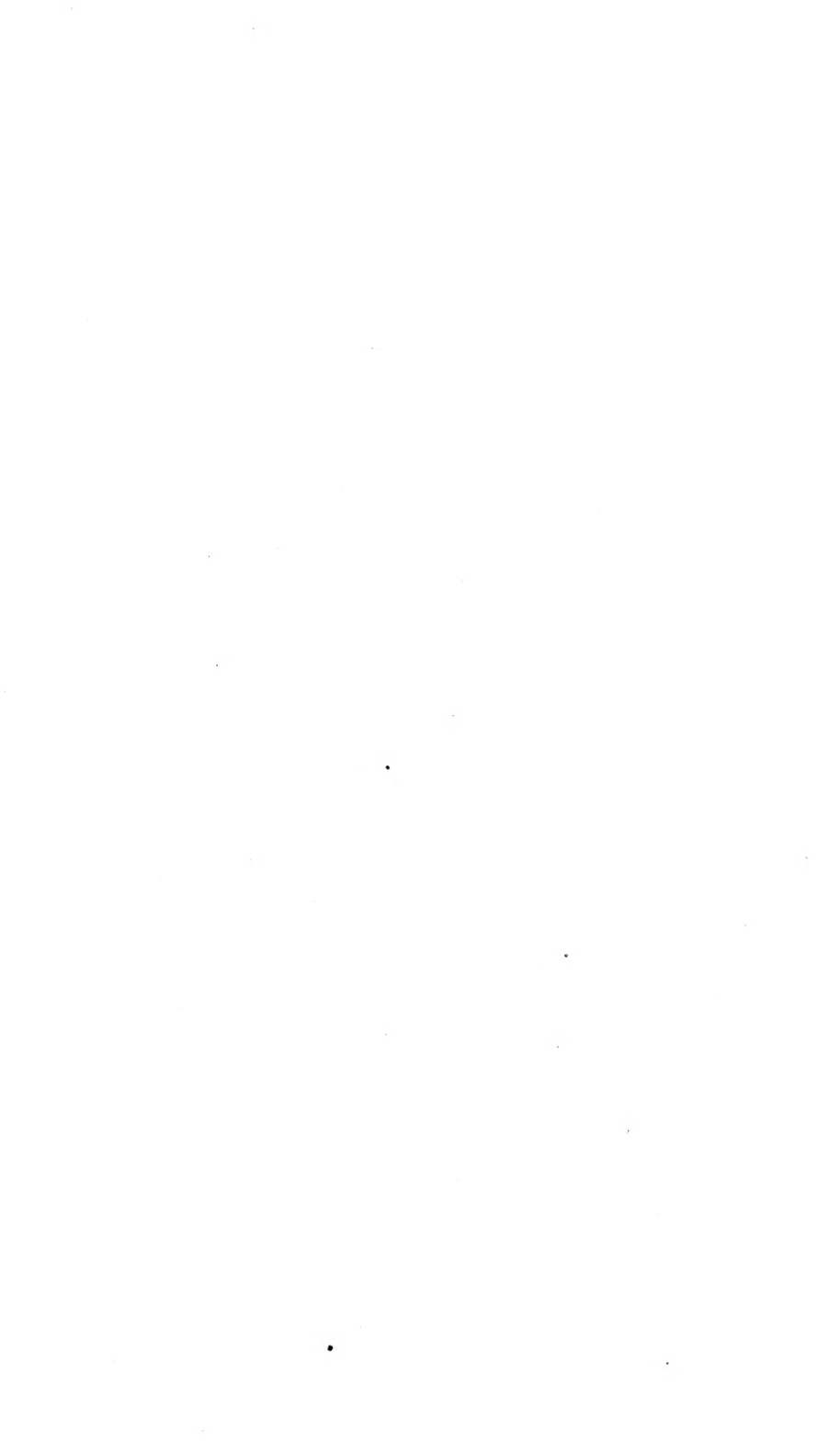
UNITED STATES OF AMERICA















with the respects of  
the author

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# THE NORTHWEST:

BY

ISAAC I. STEVENS.

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ADDRESS  
ON  
THE NORTHWEST,

BEFORE THE  
American Geographical and Statistical Society,

DELIVERED AT NEW YORK, DECEMBER 2, 1858,

BY  
ISAAC I. STEVENS.

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WASHINGTON:  
G. S. GIDEON, PRINTER.  
1858.

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# ADDRESS.

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MR. PRESIDENT AND GENTLEMEN OF THE  
AMERICAN GEOGRAPHICAL AND STATISTICAL SOCIETY:

LADIES AND GENTLEMEN: The northwest portion of the American Continent has of late, and is now, attracting much attention. It has hitherto, except a portion of our own domain, been considered only a great hunting field, rich in furs, and capable of furnishing wealth and influence to a trading establishment. The history of this domain, though meagre, is interesting. The coast was explored in the latter part of the last century by American, English and Spanish navigators. A Boston shipmaster gave name to the Columbia river and to Gray's harbor, between that point and Cape Flattery. A Spanish navigator gave name to the Straits de Fuca, and other points in the vicinity; and British navigators gave name to Vancouver's island, and to other points of the adjacent waters and coasts.

Although two centuries since the Jesuit missionaries penetrated to the Northwest from the Mississippi, it was not till towards the close of the last century that the Northwest Company and the Hudson's Bay Company pushed their explorations to the frozen ocean and to the Pacific, in about parallel 52.

About this time they established posts over all this extensive country. The explorations of Lewis and Clark at an early part of the present century, made known to us the two great rivers across the continent—the Missouri and the Columbia—and the general character of the country. They

were soon followed by the American trappers and traders, who planted establishments to, and beyond, the Rocky mountains.

The efforts of John Jacob Astor to found a great trading establishment on the Columbia, and to make tributary to it the whole western slope, by a system of posts, through misfortunes of various kinds, failed, and the whole of that country, as well as the country northward to Hudson's bay, and stretching from the Pacific to the great lakes, came under the control of a *foreign* company. Thus, so far as concerned the agencies at work to develop the country, the American people had control simply of the portion east of the Rocky mountains, and another jurisdiction, acting through a company whose interest it was to keep the country a desert, to keep it in a condition in which it would be remunerative in its furs, had control of the entire remaining portion of that country.

I will in this connection refer to the treaty of 1846, by which a line was established between the two countries, and to a remark made about, or previous to, that time in the British Parliament, to the effect that so great was the distance from the American settlements to the Pacific, and so serious were the difficulties to be encountered, that it was idle and preposterous to suppose the American States could colonize the Pacific coast. At the very time this confident assertion was being made, our emigrant wagons were moving over those mountains, and that same fall American citizens had carved out their homes on the shores of the Pacific ocean, and raised above them the stars and stripes of their country's power. The fact thereby became established, that that western coast was ours by the natural process of colonization, and that American genius and enterprise could scale the Rocky mountains and overcome every difficulty lying between the valley of the Mississippi and the Western ocean. From that time the way was thronged with the emigrant wagons of our people, who went on the

long distant journey with their women and their children. From that time did that country become known to us as a civilized community; as a community of families; as a community which would have a great part yet to play in the destinies of the country and of the world.

Time rolled on; California was acquired, and its immense mineral riches became known. Oregon, which had been healthfully and rapidly settling, became stationary. Many of her people went to California to dig for gold. Emigration was turned overland to California, and she became a great centre of attraction, not only to the people of the States, but to the people of other countries. This stationary condition of Oregon, however, continued but for two or three years, and then she greatly increased in population. Gold was found in Southern Oregon, and large numbers of miners found remunerative employment there. The northern portion of Oregon was organized into a separate Territory, the Territory of Washington.

Within the last four or five years rumors had spread abroad that gold was to be found in Washington and in the British possessions to the north. The country was more or less *prospected* in each year, and this year we find its mineral wealth is attracting the attention of the civilized world. We find that both in Washington and in British Columbia, facts exist, which establish the extent and richness of their gold diggings.

This seems therefore to be an opportune moment for presenting in a careful and deliberate manner the geography, resources, and ultimate development of that entire region.

This is the object which I propose by my address of this evening. I shall endeavor to do this with all the dispassionate judgment that I can command. My purpose is not as the partisan, to set forth the advantages of a particular section of country, but to present that section fairly and candidly, both in its relation to the countries north

and south, and the great connections east and west. To facilitate the investigation of this whole subject, I have had prepared a map on a large scale, giving the entire northern portion of the continent from the parallel of San Francisco and Washington city to Hudson's bay. On this map I have exhibited the mountain ranges, the great navigable streams, the practicable passes and the principal prairie regions. Looking on that map, your attention is arrested first by the great mountain chain from which flow waters to either ocean. Following those waters, you observe great rivers having long, distant courses before they reach the Gulf of Mexico, Hudson's bay, the Frozen ocean, and the Pacific ocean. Observe especially those two great rivers, the Missouri and the Columbia; follow them up to their upper tributaries, and you will find that they interlock in the very heart of the Rocky mountains. You will find that from the head of steamboat navigation of the one river, to the head of steamboat navigation on the other, the distance is but inconsiderable compared with the entire distance across the continent. There is Fort Benton, 2,415 miles above St. Louis. To this point you can take steamers seven months in the year, carrying 150 tons of freight, and here at the mouth of the Palouse, on the great southern tributary of the Columbia, Snake river, you come again to waters navigable by steamers. The distance from the head of steamboat navigation on the Missouri, to the head of steamboat navigation on the Columbia, is but 450 miles.

There are other streams, second only in importance to the Missouri. The two branches of the Saskatchewan, that have their sources also in the Rocky mountains, north of the Missouri, stretch a great distance eastward to Lake Winnipeg, and find their way northward into Hudson's bay. They connect also with the main Columbia itself, affording transit for passengers and freight many months of the year: and thus the Columbia river and the two



branches of the Saskatchewan have been the great lines of travel of the Hudson's Bay Company. It is through that country they have established their many posts. I propose in this connection simply to refer to these streams geographically. In another part of my address I shall refer to them more as avenues of travel and of commerce.

The Mississippi has also its source in this region, furnishing with its tributaries a long course of waters navigable by steamers, and affording a very close connection both with Lake Superior and the Red river of the north; and the Red river of the north, flowing northward, and in a direction opposite to that of the Mississippi, is also navigable within our own borders several hundred miles for steamers, and makes the connection between our own system of rivers and those which flow into Lake Winnipeg and Hudson's bay.

But the great feature of the northern portion of the American continent is the water line of the great lakes, which stretch more than half way across from the Atlantic to the Pacific; a fact of deep significance, when we consider that vessels, without breaking bulk, can pass thence to Europe, either by the Canadian canals and the St. Lawrence, or by the New York canals and the Hudson.

Thus, then, we find that the country which we are describing, geographically, is one of great natural water lines across the continent—the great lakes, the Mississippi, the Red river of the north, the Missouri, the two branches of the Saskatchewan, and the Columbia. If we look to the extreme southern portion of the country under consideration, we find it deficient in navigable streams. After leaving the Missouri, its tributaries in the vicinity of the route, the Kansas, the Platte, and the Running Water, are unnavigable; and we do not come to navigable streams again until we have crossed the Sierra Nevada, and gone far down into the valley of the Sacramento.

I need not refer particularly to the mountain chains which characterize this country—the Sierra Nevada of California, and the Cascade mountains of Oregon and Washington, stretching far to the northward: the Rocky Mountain chain, having a vast extension in the parallel of San Francisco and Washington city, and to the northward of the South Pass, and then greatly diminishing in breadth still further north, until it passes beyond the 49th parallel into the British possessions. Again, there are, intermediate between these two great chains, many subsidiary chains, branching off from the Sierra Nevada, the Cascades, and the Rocky mountains, which need not be more specifically referred to.

Another peculiarity of the country of the Missouri and the Columbia is, that on the eastern slope the prairie region extends to the very base of the Rocky mountains. On and northward of the railroad line, from Fort Union along the valley of Milk river to Fort Benton, there are no upheavals, with the single exception of the Three Buttes, which rise out of the prairie just under the 49th parallel, three thousand feet high, about 100 miles eastward of the Rocky mountains.

If you look to the Rocky Mountain region, between the 46th and 49th parallels, you will find that it is essentially a country of prairies. West of the Bitter Root chain of mountains, a great plain stretches to the Cascade mountains, on the west, and from the 48th to below the 46th parallel. This prairie region is, for the most part, well watered, well grassed, and furnishes a large portion of arable land.

One other feature remains to be considered in the geography of this country, and that is, the two great ports on this coast, San Francisco and Puget's sound. San Francisco is the great port of California, and must ever be a great key-point of business and commerce. But Puget's sound is admitted by all naval and military gentlemen

who ever visited its waters, to be the most remarkable roadstead on the shores of any ocean. It has 1,600 miles of shore-line and great numbers of land-locked, commodious, and defensible harbors. It can be entered by any wind, is scarcely ever obstructed by fog, and is the nearest point to the great ports of Asia of any harbor on our western coast.

With this brief statement of the geography, I will now consider the resources of this country ; and at this stage of the proceeding, I am reminded of the discussions, which have occurred within twenty years, in which that country has been pronounced an inhospitable, cold, and barren country, fit only for Indians, wild beasts, and hunters. Why, sir, the climate of Puget's sound is milder than that of New York. You never find ice on its surface, or snow for more than a few days at a time on its shores ; and our good friends in San Francisco have to go north to the Russian possessions to get ice. The resources of Puget's sound and the country on the Columbia river and on the Willamette are literally inexhaustible. The whole country in either territory west of the Cascade mountains has, for the most part, a fertile soil, a climate so mild through the winter that cattle do not require fodder, and seed can be sown from September to March ; and then we have the glorious summers, which enable us to gather our crops without fear that they will be injured by rain. The forests on Puget's sound are a great source of wealth. At this time there are on that sound nine large steam-mills and many water-mills in operation, manufacturing lumber, and several large spar establishments. Seventy-five millions of lumber are now manufactured a year, more than half of which is sent to foreign ports. Spars are not only sent to Asia, the Sandwich Islands, and Australia, but to the navies of France and England ; and they have been pronounced by the inspectors to be the best spars they ever

saw ; and yet the lumber and spar business is in its infancy.

Within one mile of the shores of Puget's sound, there is more timber than can be found on all the tributaries of all the waters of the State of Maine.

On the coast there are extensive fisheries of cod and halibut, which stretch from the mouth of the Columbia river to beyond Vancouver's island.

This portion of our coast also abounds in whales, and a single little tribe of Indians, the Macaws, at Cape Flat-tery, with their rude means, have produced 30,000 gallons of oil in a single year.

On the eastern shores of the sound, and on the Straits de Fuca, there is coal which has been pronounced by experts to be adapted to river steamers, and the opinion has been ventured that it will answer for ocean steamers, though this has not been tested.

The country also abounds in water-power near to navigable waters, with all the conveniences to apply it to manufacturing and mechanical purposes with economy and success.

From the Cascade mountains to the Rocky mountains there is a vast pastoral and agricultural region.

Looking on this map I point out to you the Yakima country, admitted by all to be a good grazing country. In the portion immediately north of the Columbia, there is a single tract of 2,000 square miles of arable land.

I will take you to the Walla-Walla valley, which, from this height, (near Wild-horse creek,) presents as pleasant a landscape as one's eyes ever beheld. Here is this beautiful valley before you, its streams lined with cottonwood, the neighboring mountain spurs covered with pine, giving you the most delightful picture of what it will be, when it becomes settled and occupied. You can see in imagination cities and villages along these streams, the village school and the church-spire. Nearly the whole of this country,

between these mountains and Snake river, is an arable country, and nearly one half of it is adapted to small farms. This valley, or rather re-entering of Snake river, is the great key of our interior, and can subsist a farming population of 100,000 souls.

The country west of the Bitter Root, and north of Snake river, and thence extending westward nearly to the meridian, passing through the mouth of the Palouse, has a fertile soil, adapted to wheat, cereals, and vegetables. As regards the portion west of this meridian, it is somewhat affected by drought, and is more of a grazing than an agricultural country. On the line of the Columbia, on the shores of many of the streams and lakes, and in many intervening swales and valleys, tracts will be found where there is land enough to supply the grazing population, which that country is able to support.

The country north of the Spokane, and thence to the 49th parallel, is wooded, and a very considerable portion of it is arable. The Bitter Root mountains are covered with heavy timber—pine and fir, and larch and cedar. I do not wish to be thought to speak as a sanguine man, when I dwell on this country between the Bitter Root and the Rocky mountains, known as the Flathead country. If you look to the isothermal lines which are drawn on this map, you will see that there is nothing in the condition of the temperature to prevent the raising of crops. But we have the practical experience of the few settlers, and of the Jesuit missionaries in that country, to establish the fact both of the certainty and of the goodness of the crops. I estimate that in the Flathead country, and along the eastern slopes of the Rocky mountains, the amount of arable land is at least one-third of the whole, and that it will be found to exceed 12,000 square miles. The country from the Rocky mountains to the great rivers running to the Gulf of Mexico and Hudson's bay—I refer to the country stretching to the great

lakes, the Upper Mississippi, and Lake Winnipeg, and watered by the Upper Missouri and its tributaries, by the two branches of the Saskatchewan and the Red river of the north—is adapted for the most part to settlement and civilization. It is not simply a grazing country, but all through it are large bodies of arable land, that entitle it to the distinction of being considered an agricultural country.

In my judgment, the time will come when there will be agricultural settlements throughout the whole extent of this country, from the Mississippi to the shores of the Pacific, simply excepting limited extents of country along the higher part of the mountain chains, and in some of the prairie regions, to be referred to more particularly hereafter. As illustrative of the capacity of this country, I beg to refer to a few facts. The Indians of Washington Territory and Oregon, east of the Cascade mountains, are rich in horses and cattle, the former of which have been introduced within a hundred, and the latter within thirty years. Their wealth perhaps is not equalled by any civilized community on this continent. Indians among those tribes own from 1,000 to 4,000 head of horses and cattle each. The Spokanes and Flathead nation have many horses and cattle, which range the winter long without fodder, and, as I know from personal observation, they do not shrink away but very little in flesh. Never have I seen fatter beef than the Indian cattle, in the Walla-Walla, in January. At Fort Benton and Fort Union, where there are large numbers of horses and cattle, they retain their flesh all winter without fodder.

We now come to the development of this great portion of our country, which I shall consider both as regards the agencies actually at work now to develop the region, and the measures which should be adopted looking to the advancement and prosperity of the whole country. Much has been already done. The country has been explored by order of the government. A commencement has been

made in surveying the public lands. Some progress has been made in negotiating treaties with the Indian tribes, and those same Indian tribes have recently been shown a memorable instance of the power and the determination of the government, to protect the lives of its citizens. The surveys have enabled me to speak with certainty of the resources of the country, and they will enable me to speak with some confidence as to other measures which ought to be undertaken to develop that country, looking always to the honor and renown of all these United States.

The discovery of gold in British Columbia has developed, on the part of the British people, an earnest persistent determination to establish communications across the continent to bind into one union all its North American possessions. It is an object worthy the power and enterprise and the prestige of the British government, and I thank God that there is not an impulse of my soul, which would cause me to feel any uneasiness or any jealousy at the success of such an undertaking. Here we are, two great powers, speaking the same tongue, and let us look upon it as a friendly race for supremacy. Let us see which, in this friendly race, will outstrip the other—which shall be the carriers of the commerce of the world.

Gentlemen, the time has passed for men seriously to discuss the question as to whether the wants of commerce, the duties and responsibilities of government, the fulfilling the relations of social and domestic life, do not demand a secure and rapid transit from ocean to ocean. The question simply is, is it practicable to establish great lines of travel from the water line of the great lakes to our magnificent Puget's sound, that port which is the nearest of all our ports to Asia? Again the question is, do not great national interests urge the accomplishment of this enterprise at the earliest possible moment? It is not whether such an undertaking will inure to the benefit of Puget's sound or the people of the great lakes, but whether this is not a project

upon which rests the question, as to whether the great carrying trade from Asia to Europe shall pass over American or British soil; whether upon the success of this undertaking does not rest the question, whether the key of the Northern Pacific shall be in the hands of the American people or in the hands of the subjects of a foreign power. It seems to me that not New York, or Boston, or Portland, is alone interested, but every part of our Atlantic and Gulf coast, and the entire country.

And, Mr. President, if it be a practicable undertaking to build this road and establish this route, it is the duty of our government and of our people to push it forward. It ceases to be sectional and geographical and partisan, and it rises into a noble and elevated nationality, to which all hearts should yield. I propose to discuss this question in the light of the practical experience, developed in the prosecution of great railroad enterprises, in regard to which the facts stand out in letters of gold.

The first question which I shall consider is, the objections urged against the northern route in consequence of the severity of the climate and the excessive depth of the snows, and I regret to be obliged to waste time on a matter which has long since been established. But it is still called in question by men of intelligence, and has even place in official reports.

In an examination of that country, which I made in the years 1853-'4-'5, I deemed it a fundamental and essential fact to be determined, and it was determined in a manner that will enable me to speak positively. The passes of the Rocky mountains, Hell Gate, Northern Little Blackfoot, and Cadot's Pass were crossed by my parties in the months of December, January, February and March, in the years 1853-'4, and in no one of these passes did they find more than fifteen inches of snow. In the winter of 1854-'5, the Flathead Indians passed through these passes in January, February, and March: whole tribes,



with their women and children, and their pack animals laden down with furs and meat. I was informed by Victor, head chief of the Flathead nation, an Indian whose valor and courtesy and truth have become classic in the pages of the Jesuit Missionary de Smet—by Victor, who at seventy-five is still the leader of his people in war, and first in the chase of the buffalo, that since the memory of the Indian, they had passed these mountains year after year through the winter months. That same winter, the party that crossed the Rocky mountains in January, went down Clark's Fork in February; they went on horseback, the sole trouble being that there were some places where the snow was deep enough to cover up the grass; but in these cases it was in the wooded portions, and  $2\frac{1}{2}$  feet was the greatest depth.

When they left the wooded region where it was  $2\frac{1}{2}$  feet deep, and came to the prairie region, they found that it was but a foot deep. Every gentleman knows what influence forests have in preserving the depth of the snow, and how it disappears when the land is cleared. The question is not what depth the snow is in the forests, but what it will be on the cleared land. There is one point alone about which we have not sufficient information, and that is, the crossing of the Cascade mountains to Puget's sound; but I am satisfied that there will be no serious obstruction from snow. The snow was but six feet, for a short distance, in the latter part of January, 1856, and I am of opinion that it did not subsequently increase much in depth, though this fact has not been determined by actual ad-measurement. At Fort Benton and Fort Campbell, ever since they were established some twenty-five years since, the fur companies have taken their goods to their winter trading posts, on the Milk and Marias rivers, in wagons, there not being snow enough for sleds. Will the snows of this route, which do not prevent the Indians from travel-

ling, furnish any difficulties which will render it unusually troublesome for the passage of railroad cars?

I will now consider the question of the cold. It is alleged, that the weather is so cold on the route of the 47th parallel, that it will be impracticable to work men in the construction of the road for a large portion of the year, and that it will be impracticable to run cars for many days in the winter.

Unfortunately for these opinions, we happen to have observations on these points, and to have great lines of railroad in operation over tracts of country as cold, and even colder than the route from Fort Benton to the shores of the Pacific. The mean winter temperature at Fort Benton in '53-'54 was  $25^{\circ}.38$ , above zero. The average at Montreal, on the Grand Trunk railroad, for the same year, was  $13^{\circ}.22$ , and for a mean of ten years  $17^{\circ}.80$ , above zero. At Quebec it was, in '53-'54,  $11^{\circ}.03$ , above zero, and for a mean of 10 years  $13^{\circ}.30$ , above zero. On the great Russian railroad, from St. Petersburg to Moscow, the comparison is very similar. The mean winter temperature for a series of twenty-one years at Moscow is  $15^{\circ}.20$ , and at St. Petersburg, for a mean of twenty-five years,  $18^{\circ}.10$ , above zero.

At Fort Snelling, on the great lines through Minnesota from St. Paul to Pembina, and from St. Paul to Breckenridge, now actually in process of construction, the mean winter temperature of '53-'54 was  $11^{\circ}.64$ , and the mean of thirty-five winters  $16^{\circ}.10$ , above zero. Thus in the winter of '53-'54, an unusually cold winter, Fort Benton was  $12^{\circ}$  warmer than Montreal,  $14^{\circ}$  warmer than Quebec,  $14^{\circ}$  warmer than Fort Snelling,  $10^{\circ}$  warmer than Moscow, and  $7^{\circ}$  warmer than St. Petersburg,. Looking to the Bitter Root valley, we find its average temperature in the winter of '53-'54 to be  $24^{\circ}.90$ , and in '54-'55,  $30^{\circ}.30$  above zero, making it for the two winters respectively  $10^{\circ}$  and  $15^{\circ}$  warmer than at Moscow, and  $7^{\circ}$  and  $12^{\circ}$  warmer than at St.

Petersburg. In 1853-'4 it was  $12^{\circ}$  warmer than at Montreal, and  $14^{\circ}$  warmer than at Quebec. But I will not content myself with giving you the average winter temperatures: let us consider the greatest cold observed. The greatest cold in the winter of '53-'54 was  $29^{\circ}$  below zero at Cantonment Stevens. At Fort Snelling it was  $36^{\circ}$ , at Montreal  $34^{\circ}$ , and at Quebec  $29^{\circ}$ , below zero, from which you will see, that on this route, the greatest cold is not equal to the greatest cold on the route of the Grand Trunk railroad of Canada. The same fact is unquestionably true of the great artery of Russia from Moscow to St. Petersburg, but I have not been able to obtain the daily observations for purposes of comparison. We will look at it in another point of view. Take the number of cold days when the average temperature was below zero. The average temperature was below zero twelve days at Fort Benton, ten days at Cantonment Stevens, eighteen days at Fort Snelling, eighteen days at Montreal, and twenty-three days at Quebec. Thus you will see that there were more cold days on the line of the Great Trunk railroad, and of the roads in Minnesota, than on this northern route. Having compared the average winter temperatures, and the number of cold days, let us look at the climate in another point of view. Take the number of warm days when the average temperature was above the freezing point, and I find that at Fort Benton the thermometer was forty-three out of ninety days, and at Cantonment Stevens thirty-two out of ninety days above the freezing point, against only six days out of ninety at Fort Snelling, five days out of ninety at Quebec, eight days out of ninety at Montreal, and eighteen days out of ninety at Albany—all in the winter of 1853-'54.

But it may be objected, that the temperature of Fort Benton and Cantonment Stevens is not the measure of the temperature of the intermediate rocky range through which the route passes, and which must be much lower. Fortunately the party of Lient. Grover, which has been already

referred to in connection with the depth of snow, made observations of temperature on the route, and it has been found by careful comparison that the party made the passage during the extreme cold weather of that winter, and the temperatures observed, therefore, indicate the extremest cold of the pass, and not the usual cold. A very intelligent young man who accompanied Lieut. Grover to Fort Owen returned immediately, and found the weather very mild and pleasant in the pass, corresponding to the observed temperatures at Fort Benton and Cantonment Stevens. The mean temperature in the pass from January 12th to January 23d, 12 days, was  $10^{\circ}\frac{1}{6}$ , below zero. At Cantonment Stevens the mean temperature was  $5^{\circ}.2$ , below zero; at Fort Benton  $7^{\circ}.3$ , below zero. The greatest mean cold of any day observed in the pass was  $22^{\circ}$ , below zero, against  $24^{\circ}$  at Fort Snelling, and a still lower figure at Pembina. That the winter of '53-'54 was unusually cold in the mountain region of the northern route, is shown in the fact that, in the Bitter Root valley, the thermometer never went down to zero in the winter of '54-'55, whilst it fell as low as  $29^{\circ}$  below zero in the winter of '53-'54. The average mean temperature of this valley in the winter of '53-'54 was  $24^{\circ}.90$ , whereas in '54-'55 it was  $30^{\circ}.30$ . The same general result, determined by observation, as regards the temperature of the pass, would be arrived at by using the formula, that every 1,000 feet in altitude would depress the temperature three degrees. Now only six miles of the pass is more than 5,000 feet above the sea, the greatest altitude being but 6,044 feet, and the average height of the pass is but about 4,000 feet. The pass, considering simply 165 miles of the distance, where the altitude exceeds three thousand feet, will be only from one to ten degrees colder than Fort Benton, and except the six miles above mentioned only from one to seven degrees colder.

Gentlemen, it seems to me that these facts, drawn from official records, every one of them entirely reliable, ought

to settle forever the question which has been raised prejudicial to this route, that it will be obstructed by snow and cold weather. So successful has been the great railroad from Moscow to St. Petersburg, that they are now pushing railroads in all directions, running them into regions truly Siberian, crossing tracts where for three months the thermometer never rises above zero, and for many days the temperature is lower than the greatest cold ever reached in the mountains of the United States. We find that Canadian roads are being extended westward utterly regardless of those objections, experience having shown their futility. I have lived in the snow State of Maine, and am familiar with lumbering operations on the Kennebec and the Penobscot, where timber is cut, roads are opened, and logs hauled to the streams to have them in readiness for the freshets of spring, in snow four to six feet deep. We have a body of railroad engineers and contractors who have gained their professional and practical knowledge in these snow regions, and who know that the obstacles which have been apprehended from snow have all disappeared in the light of experience. It is not the snow of your mountains in the interior, even if it should reach a depth of from six to eight feet, that will be an obstruction to the passage of cars, for by raising your road-bed and using the plough you can throw it off without difficulty. The snow comes not in single falls, but in successive falls, and there will be no difficulty in keeping the track clear. On the seaboard, the snow when followed by rain, and the weather suddenly turns cold, freezing the sleet to the rail, may and does sometimes furnish an obstruction, that may require days to overcome. If I were asked, where I should expect the most difficulty from snow in the whole country, from the Atlantic to the Pacific, I should say the first ten miles from the Atlantic ports. I cannot say this for the Pacific ports, for there snow is seldom seen, and when it does fall it disappears in a short

time. I shall therefore assume that this route is entirely practicable so far as regards cold and snow, and will pass on to a more detailed view of its characteristics and its relation to other routes. I will present it as a good route for emigrants by the ordinary conveyances of the country.

The distance from St. Paul's and the western end of Lake Superior to the shores of Puget's sound, is in round numbers eighteen hundred miles. Will the difficulties which I have presented in the way of a railroad, interfere with the carrying of the mails and the transportation of passengers the entire year on this route? I think not. I think that not only ought the mails to be carried over this route the entire year, but in a limited number of days. The service ought to be rendered on this road in wagons in eighteen days, which would be only one hundred miles a day. Russia, in the matter of her enterprises for carrying the mails, is ahead of any other Power in the world, and she can give us lessons, that it will be well for us to profit by. Our consul at the Amoor, Mr. Collins, has given us the facts of the great postal service of Russia from Moscow to Irkoutsk, in eastern Siberia. The distance is not eighteen hundred, but three thousand four hundred and twenty-six miles. On this route are established two hundred and ten stations, with a postmaster and the necessary relays of horses at each station. The contractors are obliged to carry the mails twice a week, and they are also obliged to transport passengers over the route at certain rates of travel, to wit: at eight miles an hour in winter, six and two-thirds in summer, and five and one-third in the fall. The time required to carry the mails over the entire route, is from twenty-five to thirty days, a distance on the average of from one hundred and twelve to one hundred and thirty-seven miles per day, while the government couriers go over the route in from fifteen to twenty days, or at an average of from 171 to 228 miles per day. That mail route is between the 52d and 58th parallels, crosses considerable mountain chains,

and the thermometer in winter, on a large portion of it, is habitually below zero. At Moscow, the eastern terminus of the route, the average of the thermometer is  $15^{\circ}$ , and at Tobolsk  $2^{\circ}$  above zero, while at Tomsk it is  $2^{\circ}$ , and at Irkoutsk  $1^{\circ}$  below zero. The average temperatures for January, for the three latter places, were respectively  $3^{\circ}$ ,  $5^{\circ}$ , and  $6^{\circ}$  below zero. Mr. Collins himself travelled over the entire route in winter and early spring, making such rates of travel as these. He travelled from Verch-neo-dinsk to Chetah, 300 miles, in forty-five hours; from Irkoutsk to Kyachta, 367 miles, in forty-eight hours. But he mentions another fact more significant still. On this distance of 3,426 miles, between the parallels of 52 and 58, the thermometer on a large portion it, through the winter, below zero, he found five hundred cities, and villages, and towns, showing conclusively that the extreme cold presented no difficulty in the way of the occupation of the country. This has all been done by imperial edicts, acting on a nation of serfs, done simply in obedience to the idea of reverence for authority. What will not the genius and enterprise of freemen and citizens do on any of our overland routes, when the government comes forward and establishes its mail service, when the contractor is not hampered by petty and exacting restrictions, and our people are left free, each man to carve out his fortunes and his home. The Czar of Russia establishes his route, and in part builds up his towns and villages and cities with his prisoners of State and the refuse of his jails, whereas in our case it will be the very flower and substance of our people, who will apply the energies of freemen and of sovereigns to the building up of our routes. I therefore have a right to assume, in the light of the experience of the great mail service of Siberia, that there will be no difficulty on our, comparatively speaking, much milder and shorter route.

Let us look, however, to existing routes within the limits of the United States. The cold on the route from St. Paul's

to La Crosse is greater than in the Rocky mountain region of the northern route, and yet from St. Paul's to La Crosse the mails will be carried this winter, a distance of nearly two hundred miles, in forty-eight hours. For the last twelve years, the mails have been carried from St. Paul's to Pembina, without, in any case, a failure to carry them in the prescribed time.

The pioneers of Minnesota and the Northwest find no difficulty in encountering the cold and attending to their outdoor business, and they are satisfied that the mails can be carried in that region, and passengers transported as rapidly as in the Russian service.

When we meet such men, admitted to be men of experience, integrity, and capacity, and who from unpromising and uncertain beginnings have carved out fortune and reputation, let us accept the results of their experience and observation, rather than the speculations of the closet and the systems of the schools.

I now come specifically to the discussion of this northern route, and I will compare it, with all the candor and fairness I am able, with other proposed routes, and endeavor to show, from statistics, how much entitled it is to national consideration.

Railroad lines have frequently been presented by way of antagonism to water lines. Now each has its part in the economical transportation of passengers and freight; railroads cannot do away with canals, nor canals with railroads. We find, that with the extension of our great railroad system, the canal system has also been extended in an equal proportion.

New York has built her great lines of railroads, and she has also enlarged her Erie canal. The Canadas have built their Great Trunk and Western roads, and now new projects are presented for shortening the water communication from Lake Huron to the waters of the St. Lawrence. We find that the cost of transporting goods on great water



lines is vastly less per mile, than the cost of transporting goods on railroad lines. In a large ocean voyage the rate is, perhaps, one and a half mills per ton per mile; on a great navigable river, or great canal, the amount increases to two and a half mills per ton per mile; whereas there is no railroad line, built at home or abroad, where the cost of transportation will be materially less than five mills per mile, and it will vary, according to the grade of the road, from five to twenty-odd mills per mile. Thus you will observe, that on the great water lines, the ocean, the Mississippi, the great lakes and the New York canals, the cost of transportation is but a fraction, seldom exceeding one-half, and not often one-quarter, the cost on the railroad; and hence, even in the case of water lines closed by ice nearly half the year, they will carry the heavy and bulky commodities, as grain, coal, and machinery; the railroads carrying the light, perishable and costly articles, where time becomes an important element in the cost. If a railroad communication be an inseparable connecting-link between great water lines, it is entitled to special consideration. Such is the proposed railroad on this northern route. It connects the navigable waters of the Missouri with the navigable waters of the Columbia, and at the head of steamboat navigation. It connects Puget's sound and the Columbia valley with the head of navigation of the great St. Lawrence basin, and with the heads of navigation of the Mississippi and the Red river of the north. It is the shortest equated railroad line across the continent, whether the eastern terminus be on the western border of the States or on the Mississippi, or, in the case of the northern route, on Lake Superior; and it is much the shortest lineally of all the roads, except those from San Diego and San Pedro, on the route of the 32d parallel.

In connection with either the great lakes and its system of canals and rivers, or the great railroad lines of the Canadas and the United States, it furnishes the most direct and

cheapest route on the continent for freights and passengers from Asia to Europe and back again, and also between Asia and the people of our Northwest, our West, our centre, our East, and the great seats of commerce on the Atlantic coast.

The lineal distances on the route of the 32d parallel to the Mississippi are 1,748 and 1,683, against 1,747 and 1,764, the lineal distances of Vancouver and Seattle from St. Paul's, and against 1,733 and 1,750, the lineal distances of Vancouver and Seattle from Superior City; and starting from the western border of the States, the lineal distances on the route of the 32d parallel are 1,598 and 1,533 miles, against 1,527 and 1,546 miles, the lineal distances from Breckenridge to Vancouver and Seattle.

The following table is from official reports, wherein I have shown the distances on an air-line between the termini of the several explored practicable railroad lines across the continent, the lineal distances, the sums of ascents and descents, the equated distances in miles, the estimated cost, the extent of cultivable country, the extent of country which is less than 1,000 feet above the sea, the extent of country which lies between 1,000 and 2,000 feet above the sea, the extent of country between 2,000 and 3,000 feet above the sea, the extent of country between 3,000 and 4,000 feet above the sea, the extent of country between 4,000 and 5,000 feet above the sea, the extent of country between 5,000 and 6,000 feet above the sea, the extent of country between 6,000, and 9,000 feet above the sea, and the summit of the highest pass on each route for the routes of the 47th parallel, 42d parallel, 35th parallel, and 32d parallel.

*Table showing the lengths, sums of ascents and descents, equated lengths, cost, &c., of the several routes explored for a railroad from the Mississippi to the Pacific.*

	Distance by air-line.		Distance by proposed railroad route.		Sum of ascents and descents.		Length of level route of equal working expense.		Comparative cost of different routes.		Number of miles of route through cultivable country.		Number of miles of route through land generally uncultivable, arable soil being found in small areas.		Number of miles at an elevation above the sea between—							Altitude above the sea of the highest point on the route.		Tunnel at an elevation of—	
	Miles.	Miles.	Miles.	Feet.	Feet.	Miles.	Miles.								0 and 1,000.	1,000 and 2,000.	2,000 and 3,000.	3,000 and 4,000.	4,000 and 5,000.	5,000 and 6,000.	6,000 and 9,000.	Feet.			
Route near 47th and 49th parallels, Breckenridge to Seattle.....	1,247	1,544	21,787	1,958	\$94,915,380	1,224	320								130	433	733	180	62		6.....	6,044			5,195
Route near 47th and 49th parallels, Breckenridge to Vancouver.....	1,213	1,527	17,587	1,861	94,282,880	1,207	320								243	391	648	178	61		6.....	6,044			5,195
Route near 41st and 42d parallels, from Council Bluffs, via South Pass, to Benicia..	1,410	2,032	29,120	2,583	116,095,000	632	1,400								220	170	210	160	590	285	397	8,373			.....

TABLE—Continued.

	Distance by air-line.	Distance by proposed railroad	Sum of ascents and descents.	Length of level route of equal working expense.	Comparative cost of different routes.	Number of miles of route through cultivable country.	Number of miles of route through land generally uncultivable, arable soil being found in small areas.	Number of miles at an elevation above the sea between—							Altitude above the sea of the highest point on the route.	Tunnel at an elevation of—
	Miles.	Miles.	Feet.	Miles.				0 and 1,000.	1,000 and 2,000.	2,000 and 3,000.	3,000 and 4,000.	4,000 and 5,000.	5,000 and 6,000.	6,000 and 9,000.	Feet.	
Route near 35th parallel, from Fort Smith to San Francisco.....	1,550	2,096	48,521	3,015	\$106,000,000	646	1,450	585	290	261	236	181	295	248	7,550	.....
Route near 35th parallel, from Fort Smith to San Pedro.....	1,360	1,820	48,862	2,745	92,000,000	420	1,400	354	292	236	210	185	295	218	7,550	4,175
Route near 32d parallel, from Fulton to San Francisco, by coast route.....	1,630	2,024	38,200	2,747	90,000,000	834	1,190	893	347	120	342	271	50	.....	5,717	.....
Route near 32d parallel, from Fulton to San Pedro.....	1,400	1,598	30,181	2,169	68,000,000	408	1,190	478	337	120	342	271	50	.....	5,717	.....
Route near 32d parallel, from Fulton to San Diego.....	1,360	1,533	33,454	2,167	68,000,000	374	1,159	420	305	125	362	271	50	.....	5,717	.....

I have assumed as the starting point of the northern route, for the purpose of this comparison, Breckenridge, on the western border of the State of Minnesota, a point which is a terminus of a road now actually under construction by aid of the land grants of the government.

The following table makes the eastern termini at Superior City and St. Paul's, and of the other routes, on the Mississippi river :

*Table showing the lengths, sums of ascents and descents, and equaled distance (or length of level route of equal working expense) of the several routes explored for a railroad from the Mississippi to the Pacific.*

	Distance by proposed railroad line.	Sum of ascents and descents.	Length of level route of equal working expense.
Route near 47th and 49th parallels, Superior City to Seattle.....	1,750	21,787	2,164
Do do do Vancouver .....	1,733	17,587	2,067
Route near 47th and 49th parallels, St. Paul's to Seattle.....	1,764	21,787	2,178
Route near 47th and 49th parallels, St. Paul's to Vancouver.....	1,747	17,587	2,081
Route near 41st and 42d parallels, from Rock Island, via Council Bluffs, via South Pass, to Benicia.....	2,299	29,387	2,853
Route near 35th parallel, from Memphis, via Fort Smith, to San Francisco.....	2,366	48,791	3,285
Route near 35th parallel, from Memphis, via Fort Smith, to San Pedro.....	2,090	49,132	3,015
Route near 32d parallel, from Gaines, via Fulton, to San Francisco, by coast route.....	2,174	38,350	2,897
Route near 32d parallel, from Gaines, via Fulton, to San Pedro.....	1,748	30,331	2,319
Route near 32d parallel, from Gaines, via Fulton, to San Diego.....	1,683	33,604	2,317

If I am met with the objection that the Arkansas, Mississippi and Missouri are navigable, and that the routes on the 42d, 35th and 32d parallels should be stopped short at navigable waters, then, for purposes of comparison, I say very well, we will stop the northern road at Fort Benton, at the head of steamboat navigation of the Mississippi, which will give a result vastly in its favor. I am of opinion, however, that the Mississippi valley and the great lakes is the proper eastern base. Thus we find—the western terminus of the routes of the 42d, 35th and 32d parallels, being San Francisco—that the lineal length of the northern route is 549 miles shorter than that of the 42d parallel, 616 miles shorter than that of the 35th parallel, 424 miles shorter than that of the 32d parallel; and that, as regards the equated distances, the northern line is 689 miles shorter than the line of the 42d parallel, 1,121 miles shorter than the line of the 35th parallel, and 733 miles shorter than the line of the 32d parallel. But, looking to the eastern terminus, where are you when you reach the Mississippi on the route of the 42d, 35th and 32d parallels?

You are on a great navigable river, from which you can supply the Mississippi valley; but how will you reach New York, Chicago, Portland, Boston, Philadelphia and Baltimore?

Will you tranship on the Mississippi, and take your winding course by the Gulf of Mexico, or take the rail, and seek some of the intermediate water lines which stretch along the whole distance?

Will you make use of the Ohio, and the railroads and canals of New York, Pennsylvania and Virginia? On the northern route we are on navigable waters; we are now ready to enter our ships and go to Europe, or to New York; or, arrived at Montreal, we can pass by rail to Portland. If we compare Chicago as a great lake port with Superior City, its distance from Puget's sound on the northern route via St. Paul's, is 317 miles shorter than its distance from Benicia via South pass.

*The lineal distances from Seattle via Northern route, via St. Paul's, and from Benicia via South Pass, via Council Bluffs, via St. Louis, to these several ports of the Atlantic and Gulf coast, will be as follows:*

	Seattle, via St. Paul.	Benicia, via St. Louis.	Differences in favor of Nor'n route.
Portland .....	3,249	3,831	582
Boston .....	3,352	3,696	344
New York .....	3,126	3,546	420
Philadelphia .....	2,988	3,454	466
Baltimore .....	2,966	3,355	389
Washington .....	3,004	3,375	371
Charleston .....	3,328	3,445	117
Savannah .....	3,313	3,430	117
Mobile .....	3,030	3,147	117
New Orleans .....	3,115	3,232	117
Averages .....	3,131.1	3,453.1	

The distance from Benicia to St. Louis is 2,482 miles.

Thus the average distance from Seattle, via St. Paul's, to the principal ports of the Atlantic and gulf, is 316 miles less than the average from Benicia via St. Louis to the same points. This saving of distance via St. Paul's ranges from 117 miles, as in the case of New Orleans, to 582 miles, as in the case of Portland. If the equated distances were used, it would make an additional difference in favor of the northern route of 137 miles. Thus every seat of commerce on the coast is nearer to Puget's sound by the northern route, than to the waters of San Francisco by the central route. See Appendix for the lines in detail.

I am, however, of the opinion that no single line of railroad is the proper American solution of the problem of continental communication.

The northern route should not alone be patronized by the government. The mail service now in operation, and about to be put in operation, indicates three lines which



should share the patronage of the government; but these few facts as to distances, and the known relations between water lines and railroad lines, must show you conclusively that on this northern route must pass the great carrying trade from Asia to Europe, and from Europe to Asia; that on this northern route must pass Asiatic supplies for much the largest portion of our own country and the Canadas. It is most emphatically a national route; and if we do not establish it, the British people and government will establish one north of the 49th parallel, and then we shall find ourselves in the position of the people, from whose hands had passed the sceptre of Judah.

It will be pertinent in connection with this northern route for a Pacific railroad, to refer somewhat in detail to its capacity for settlement. I have had the advantage of going over the difficult and disputed points of this road three times, and have travelled over it at various seasons of the year. The last time I crossed the mountain region was in the months of November and December, 1855; and I am of the opinion, derived from careful, and, I trust, accurate observation of the country—that continuous agricultural settlements can be planted nearly the whole distance along this line. If you will follow me on this map, you will perceive that the continuous line of settlement will extend to beyond James river, in the new Territory of Dacotah. From that point to the entrance to the valley of Mouse river, there are swales and good land from point to point, sufficient to form nuclei for mail stations, at less than fifteen miles apart. In this Mouse River valley there is much cultivable land. In crossing the Grand Couteau du Missouri, you come to an undulating and somewhat broken surface, which furnishes tolerable grazing; but for fifty miles, not much land for settlements. When you come to the Missouri, in the vicinity of Big Muddy river, you find a region for settlements, and a large tract of country admirably adapted to all kinds of cereals and vegetables.

The Milk River valley, through which the route passes, has very fine wheat lands, not simply in its own valleys and those of its tributary streams, but in the adjacent prairies. When you reach the Missouri again, you come to bottoms of arable land, with groves of cottonwood, like those of Milk river, of large growth, suitable for fires and building. The various tributaries of the Missouri, in the vicinity of the head of navigation, furnish large quantities of arable land.

The Marias, Teton, Sun, Dearborn, High Wood, Smith's, Judith, and other streams are all well adapted to settlement.

In the summer of 1854, explorations were made from Fort Benton along the eastern base of the Rocky mountains; and where you see this summer isothermal line, there are rich farming lands. Inspect this line, and you will find it sixty degrees above zero; and there is nothing in the summer temperature which will interfere with crops. Recollect that there are no chilling blasts from May to October, to blight the promised harvest; and here let me say, that when Lieut. Mullan passed this Divide (Mullan's pass) in March, from Fort Benton, he found no snow in the pass or along the route. I will therefore say, in round numbers, that from Breckenridge, on the Red river of the north, to the Divide of the Rocky mountains, the route passes through strictly a cultivable country, capable of continuous settlement, except for about 150 miles, in three several sections of about equal lengths; on this portion you can plant agricultural settlements, at points sufficient for railroad or mail stations. From near the Divide of the Rocky mountains, the country is capable of continuous settlement to within twenty miles of the Divide of the Bitter Root mountains; the eastern half of the great plain of the Columbia, the northern and the southern portions, consist of rich river valleys and fertile table-lands. A portion of the western half will not furnish arable land for continuous settle-

ments. Between the Columbia and the Cascade mountains, the line is flanked on the south by a large body of fertile land, and passes immediately through a fine grass country, and for at least half the distance through an excellent cultivable country. From the Cascade mountains to the Sound, the line passes through a continuously cultivable country. I estimate that the mountain region between the head of the Missouri and the great plain of the Columbia, the whole intermediate country, admits of continuous cultivation, except about forty miles on the highest part of the Rocky mountains, and thirty miles in the highest part of the Bitter Root mountains. Look on this map: There is a prairie (pointing it out on the map) of 3,000 acres, four to eight miles west of the Divide of the Rocky mountains, where can be raised wheat and the ordinary vegetables.

The railroad line could be laid over the great plain of the Columbia so as to pass over a continuous cultivable country to the Columbia, except for a few miles; but to cross north of the mouth of the Snake river, which is desirable to avoid detour, it will pass over about fifty miles of country not adapted to continuous cultivation, and having the general characteristics of the western half of the great plains already described. I will estimate that there are fifty miles of uncultivable country between the main Columbia and Puget's sound, though it is a large estimate. Thus, in the whole distance from Breckenridge to Seattle, a distance of 1,544 miles, the route passes through only about 320 miles of uncultivable country. East of Breckenridge, to St. Paul's and Lake Superior, the country is exceedingly rich, and inviting to the settler.

In the report of the explorations which I made in 1854, I did not do justice to the route. I was over-cautious. As I crossed the country, I was astonished to find it so different from report, and I took great pains to guard against speaking of it in terms of extravagance. Especially did I do injustice to the country between the Cascades and

the Bitter Root. It has since been more carefully examined by myself, and information has been collected from various sources. The Indian agents have done much in this way, in the discharge of the duty intrusted to them of ascertaining suitable places for reservations. The agent Bolon, who was murdered by the Indians at the commencement of our disastrous war in the fall of 1855, had in the previous summer carefully examined the country between the Cascade mountains and the main Columbia, known as the Yakima country, and found it much better than he supposed it to be the previous season, when engaged on duty with the exploration, and when he regarded it as a good country. It has, unquestionably, a large quantity of good arable land, and it is on the railroad line to Puget's sound. From the Cascade mountains to the Sound, the only difficulty in the way of farming will be the immense forest growth, which covers nearly two-thirds of the country.

I have simply presented these facts to show the cultivable character of the country. I have presented the country as it is on the earth's surface. I do not desire to make any invidious comparisons with other routes. I am ready to admit that other routes are equal in agricultural capacity. I wish they were, for it is my opinion that the more practicable routes we have, the more and larger settlements we plant on them, the more will it help to unite our country, and make us the first Power on earth.

There is another consideration, however, which I shall advert to, lest invidious comparisons should be drawn against the northern route in favor of more southern routes. I refer to the present capabilities of this route—to the agencies now at work to facilitate settlements, the organization of a mail service, and the building of the railroad.

On this route there are already considerable establishments, not simply of horses and cattle, but of farms—not merely at Fort Union, and Fort Benton, but at other points, where

cattle and horses are found in great numbers. In the Flathead country there are many farms enclosed, and, although they have been commenced only a few years, there will be the present year a very considerable surplus. At the Jesuit mission in the Flathead country, they will manufacture 300 barrels of flour more than they will consume, nearly all the wheat having been raised by the fathers and brothers of the mission, with the assistance of such Indians as they could get to work. This flour they have contracted to furnish to the forts of the American Fur Company on the Missouri, and they will take it over the mountains in wagons. The Indians had last year fifty farms, averaging five acres each, under cultivation. There are in this region two grist, and two saw mills.

If we pass over the Bitter Root mountains to the Spokane, there we find farms, with their fields, and horses, and cattle. In the Colville valley, there is now a continuous settlement of one hundred and twenty different farms. The Walla-Walla valley is also settled to a considerable extent.

Another thing to be considered in regard to planting settlements through the country is that seeds, farming utensils, and supplies of all kinds, both for settlers and for travellers, can be carried by steam to the mouth of the Palouse, so that in connection with the running of steamers on the Missouri to Fort Benton, supplies need in no instance to be wagoned more than two hundred and twenty-five miles, which statement shows how well prepared we are for any operation, which either the government or the citizens of the country, may think proper to undertake. In my railroad report of 1854, I gave a scheme, and presented a programme for building this road, which proposed making use of the waters of the Columbia and Missouri, for transporting the workmen, and tools, and materials of all kinds, and organizing the work in corresponding divisions. One would be from Puget's sound and from Vancouver to the point where the railroad line crosses the

Columbia, another from this point to the head of navigation at Fort Benton, a third from Fort Benton to Fort Union, another to St. Paul's, and the western end of Lake Superior.

Thus the route can be thrown into four divisions, on each of which you can work from both ends, so that eight sections may be worked at a time, affording extraordinary facilities to hasten the construction of the road. The most difficult of these divisions, the one between the Columbia and Missouri, could be attacked almost as soon, within two or three months, as those lying on the Pacific or great lakes. Now, here are railroad men, and they know what can be done. Suppose your route is established, a company formed, and ample means at hand; the only question for consideration will be, what are the engineering difficulties on the route, and how long, if they are vigorously dealt with, will it take you to run the iron horse from Fort Benton to the Columbia? It is not necessary to wait till the tunnelling is done on the route, as you can adopt, for the nonce, the system of zigzags, by which the Alleghanies are scaled in Pennsylvania.

I am satisfied that our railroad men would not feel complimented, if they were told they could not build such a road in four years after the location was made, and everything in readiness to commence the work. The great difficulty will be to raise the money, and not to build the road when the money is raised. Money is the sinew of railroad progress, as well as of war. But, sir, an engineer in presenting his programme considers simply the engineering difficulties. It is for presidents, and directors, and companies, to raise the money.

British Columbia is attracting the attention of this country, and of Europe, and of course a movement will be made to reach that country by great lines north of our parallel. I have been thankful for this for two reasons: One, that it redeems the northern route from the reproach of being

the Siberian trail, and makes it a central route with regard to the water line of the great lakes; and also, because I think the occupation of that country to the north of us, will cause our progress to be accelerated. I desire, from reliable statistics, to give some data from which to draw comparisons between our northern route and the routes still further north. Before doing this, however, I wish to state in the most explicit manner, that in my judgment, there is a vast gold region in the northwest portion of our continent. Gold is not found simply in British Columbia, but for a long distance south of our parallel, and extensive and remunerative diggings have been discovered in Washington Territory. The gold regions of Washington extend through the Cascade mountains, north of the Columbia, and thence eastward along Clark's fork and the Kootenay river, to near the Rocky mountains. Geologists have passed over the ground, and confirm the reports of the miners, as to the presence of gold throughout this vast region. We have the evidence of officers of the army and Indian service, and of reliable citizens, as to paying localities. In 1855, rich paying deposits were actually worked on Clark's fork, on the tributaries flowing into the Columbia, from both its eastern and western shores. In 1855, a great movement from Oregon and Washington was directed to those mines. A thousand men were on the road, when the Indian war broke out, and prevented their generally reaching the mines; but through the labors of the few who got to and worked the mines in 1855, we became possessed of the information. It is due to American citizens, that America and Great Britain became possessed of reliable information as to the gold of British Columbia. Had our Indian war been brought to a close in 1856, as it would have been, if the same uncompromising and stern measures had been taken as were taken last summer, the wealth of Washington, its gold, its platina, and lead, and silver, and copper, and quicksilver, would have been known to the world.

If you will read the most interesting narrative of Dr. Perkins, who came near losing his life amongst the Indians, and who prospected on Clark's fork last July and August, you will see why our people have not hitherto been able to work the mines, rich though they be.

The reverend Father De Smet, who went through Oregon as a missionary of the Christian faith, who is revered by Indians and by the white man, has, in his book, shown how rich the country is in mineral wealth. In conversation with his friends, he has dwelt particularly on the richness of its mines in gold. You are familiar with the character, experience, and great attainments of these Jesuit fathers, and know that reliance can be placed on their statements, in reference to the capabilities and resources of a country, which they have examined.

Therefore, in making the comparison between the northern route and others still further north, looking to the gold region, I wish you to bear in mind that the northern line leads you directly to it, as well as the lines north of the 49th parallel.

The distance from St. Paul's, *via* the northern route, to Colville, is 1,572 miles; and thence to the forks of Frazer's and Thompson's rivers is 290 miles more, making 1,862 altogether.

In regard to the land route to the Saskatchewan, from St. Paul's *via* Fort Garry, Fort Edmonton, and the Kootenay pass to Colville, we have the narrative of Sir Geo. Simpson, who gives a graphic account of the country and the estimated distances. He estimates the distance from Fort Garry to Colville to be nearly 2,000 miles, but his own more specific statement of time and rates of travelling per day, makes it about 1,800 miles. The distance from St. Paul's to Fort Garry, is given in a recent report of surveys of the Red River country, made under the authority of the Canadian government, at 558 miles; from Fort Garry to Edmonton 1,000 miles; and from Edmonton to Colville



800 miles; making a total of 2,358 miles, against 1,572 by the northern route, to Colville. Sir George Simpson, however, made Edmonton a point of his route, in consequence of its being one of the great trading posts, that he desired to visit. A land route can unquestionably be laid two hundred miles shorter, by the south branch of the Saskatchewan. To be within limits, we will allow 300 miles for the Edmonton detour, which will give 2,058 miles by the Kootenay pass, against 1,572 miles by the northern route. If your object, however, is to reach the waters of Thompson's or Frazer's river, then you must make Fort Edmonton a point in your journey.

The route then is to the Athabasca river, 100 miles by land, then up this river 150 miles, which you can ascend in boats; but it will probably, to avoid transshipment, be better to go by land; thence across the mountains by the Athabasca portage 100 miles to the boat encampment on the main Columbia—in all 350 miles from Edmonton. From the boat encampment, it is about seventy-five miles to the headwaters of Thompson's river, and one hundred and twenty-five miles to the headwaters of Frazer's river by the canoe tributary of the Columbia.

Thus, from St. Paul's to the headwaters of Thompson's river, the distance will be by land 1,983 miles, and to the headwaters of Frazer's river 2,033 miles. But your are on the waters of rivers unfit for navigation; for, from careful examination of narratives, I find that Thompson's river is never used, and Frazer's river rarely.

It is only the lower portion of Frazer's river that can be used for a distance of one hundred and twenty miles.

From the head of Thompson's river to its junction with Frazer's river, known as the Forks, the distance is 200 miles, and from the headwaters of Frazer's river to the same point, 450 miles; thus making the entire distance to the forks of Frazer's and Thompson's rivers, 2,183 or 2,483 miles, according as you follow down Thompson's or Frazer's river.

Now let us examine the Kootenay, and Athabasca passes, and compare them with the passes on the northern route.

On the passes of the mountain range, in the vicinity of the Missouri, no snow is to be seen, except during the late fall and winter months. In several of the passes, snow does not fall to a sufficient depth to seriously interfere with the travelling of animals. On the northern Little Blackfoot pass, there was no snow in the latter part of March, 1854. The height of the Divides of Cadot's and the northern Little Blackfoot pass is but about 6,000 feet above the sea. From Fort Benton by Cadot's pass to the Pacific, but six miles of the country is 5,000 or more feet above the sea, and but fifty-one miles is between 4,000 and 5,000 feet. Pack-animals can cross all these passes and through the mountains, making fifty miles per day, and expresses one hundred miles per day. I have myself made the former rate, and my express men the latter.

Now, Sir George Simpson states that the Kootenay pass is from 7,000 to 8,000 feet above the sea; that it is in the neighborhood of towering mountain peaks; that a large quantity of snow falls upon the pass, and remains there till late in the spring; and that in mid-summer he found the way difficult, in consequence of morasses and boggy ground.

As regards the Athabasca portage, Ross Cox estimates its height at 11,000 feet above the sea, with Mounts Brown and Hooker in the immediate vicinity, 14,000 feet above the sea. The pass rises up about 3,000 feet from its western base.

Ross Cox made the ascent in four and a half hours in June, where he found a wilderness of snow eight feet deep, and Franchere found five feet of snow on the 16th of May, and was two to three hours making the ascent. Alexander Ross found eight feet of snow, and was eight hours making the ascent. The difficult and snowy character of the pass is also well described by De Smet, and the narratives of De

Smet, Ross Cox, Alexander Ross, and Franchere, substantially agree.

You thus see that the route to the forks of Frazer's and Thompson's rivers, by the Athabasca portage, is not only a much longer route than that by the passes of the forty-seventh parallel, and Fort Colville, but is one which is obstructed by snows in the winter and spring months.

At the headwaters of the Columbia, and the Saskatchewan, the mountains, whose crests were bowed down to the Missouri and Clark's tributary of the Columbia, have risen up again, presenting almost a wall to the transit of the emigrant wagon or the railroad car. I do not call in question the importance of these routes of the Saskatchewan for the development of the Saskatchewan country and British Columbia, and they may be good routes for emigrants from the lower Red river colony. With the extension of settlements from Canada west to Red river, and thence up the Saskatchewan, the routes must be opened, whatever difficulties be in the way, as they are necessary to the development of the country.

Now let us examine, somewhat as a practical question, these great water lines of the Missouri and the Columbia. In the first place, our lines are organized and instinct with life and steamers. For twenty-five years steamers have ascended to Fort Union, and many have gone up to points nearly half-way to Fort Benton. It may be regarded as an organized line, from the moment facilities for passengers are at hand at Fort Benton, to make the overland trip to the Columbia. There is therefore on this route, but 450 miles of land transportation between waters navigable by steamers. Now steamers have never run on the Red river of the north, Lake Winnipeg, or the two branches of the Saskatchewan, and time is required to organize the service.

There is at the mouth of the Saskatchewan a great rapid, which will require a portage. The accounts are conflicting whether you can get sufficient depth of water on the two

branches of the Saskatchewan, and navigate them with steamers, when the river is unobstructed by ice. Sir George Simpson speaks of having gone down from Edmonton to Lake Winnipeg in May, in a perfectly light boat, and that he was frequently obliged to get out of the boat to haul it over shoal water. He stated before the select committee of the British Parliament that the longest reach of navigable waters was fifty or sixty miles, and that to make continuous steamboat navigation on either branch, it would be necessary to resort to canals around the rapids.

Alexander Ross, however, went down the northern branch of the Saskatchewan, making no portage except at the great rapids. I will, for the purpose of this comparison, take it for granted that you can run with steamers to Edmonton during the season that the river is not obstructed by ice, but here is a great point of difference. The Missouri river is open for more than seven months in the year, and the portion of the river from Fort Benton to Fort Union is open nearly eight months.

Go westward from the Mississippi and the climate becomes milder, and the coldest portion of the Missouri, the portion in the vicinity of Forts Pierre, Clark, and Randall, is never closed exceeding five months. This cold part of the river opens in the month of April, whereas by referring to the journals and narratives of gentlemen in the employment of the Hudson's Bay Company, you find that Lake Winnipeg is sometimes not free from ice till June. A through connection by the British system of waters, is prevented by ice seven months in the year. Thus, the Missouri is a navigable line for seven months, and Lake Winnipeg and the Saskatchewan for only five months—a fact most significant in regard to the facilities of the two lines in the matter of an overland emigration and transportation, where the distance at best is long, and where an additional month or two in the length of the season, is a matter of great consequence. The following table will give in detail the dis-

tances from the St. Paul's by the British water lines, to the head of Thompson's and Fraser's rivers, to the forks of the same, and to the mouth of Fraser's river.

*St. Paul, via Breckenridge, Red river, Fort Garry, Lake Winnipeg, the northern branch of the Saskatchewan, Edmonton, and Athabasca portage, to headwaters of Thompson's river, of Frazer's river, Forks of Thompson's and Frazer's rivers, by the line of each river, and mouth of Frazer's river by the line of each river.*

St. Paul's to Breckenridge.....	210	by land.
Breckenridge to Fort Garry.....	414	by water.
Fort Garry to entrance to Lake Winnipeg...	36	“
Entrance of Lake Winnipeg to mouth of Saskatchewan.....	260	“
Mouth of Saskatchewan to Edmonton.....	900	“
Edmonton to Rocky Mountain House, on the Athabasca .....	100	by land.
Up the Athabasca .....	150	by water.
Thence to Boat Encampment.....	100	by land.

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St. Paul's to Boat Encampment.....	2,170	
Thence to headwaters of Thompson's river	75	“
Or thence to headwaters of Frazer's river...	125	“
Thence from head of Thompson's river to forks of Thompson's and Frazer's rivers, by Thompson's river route.....	200	“
Or thence from head of Frazer's river, forks of Thompson's and Frazer's rivers, by Frazer's river route.....	450	“
And thence from forks to mouth of Frazer's river, 120 by water, 50 by land.....	170	“
Or from Boat Encampment to Colville.....	450	by water.

Thus, starting from St. Paul's, to reach the head of Frazer's river, you have 535 miles of land carriage. To reach the forks of Frazer's and Thompson's rivers, by the Frazer's river route, 985 miles of land carriage, and 1,760 miles water

transportation. To reach the head of Thompson's river, you have 485 miles of land carriage, and 1,760 miles of water transportation; and to reach the forks, by the Thompson's river route, 685 miles of land carriage, and 1,760 miles of water transportation. To the mouth of Frazer's river, by the route of Thompson's river, the distance by land is 735 miles, and by water 1,880 miles; and by Frazer's river the distance by land, is 1,035 miles, and by water, 1,880 miles; or on these same water lines, to reach Colville, the distance down the main Columbia from the Boat Encampment to that point being 450 miles, the entire distance will be, by water 2,210 miles, and by land 410 miles.

Now, to reach Colville, or the forks of Frazer's river, from Fort Benton, you have 480 miles of land transportation in the one case, and 770 in the other.

I wish now to make some comparison of the line of the Missouri, and the Columbia, by the northern passes, and the line of the Missouri, and the Columbia, by the South pass. This question of land or water transportation, is one of exceeding consequence, looking to the interests of the population of the States and Territories bordering on the Missouri river.

The following tables give the distances by the northern route, and the route by the South pass to Walla-Walla, Vancouver, Colville, Seattle on Puget's sound, and forks of Frazer's and Thompson's rivers:

*St. Louis via Missouri and pass of 47th parallel to Vancouver.*

St. Louis to Fort Benton .....	2,415 miles by water.
Fort Benton to mouth of Palouse ..	450 " by land.
Mouth of Palouse to old Fort Walla-	
Walla .....	81½ " by water.
Old Fort Walla-Walla to Vancouver	210 " by water.

Of which 450 miles by land and

2,706 by water—in all..... 3,156½ "

*St. Louis via South pass to Vancouver.*

Distance up Missouri to St. Joseph..... 480 by water.

St. Joseph, by South pass, to old Fort

Walla-Walla..... 1,755 by land.

Old Fort Walla-Walla to Vancouver..... 210 by water.

Giving an aggregate of 690 miles by water and 1,755 miles by land—in all 2,445.

*St. Louis by Northern pass to Colville, and forks of Thompson's and Frazer's rivers.*

St. Louis to Fort Benton..... 2,415 by water.

Fort Benton to Colville..... 480 by land.

Thence to Forks..... 290 “

Making an aggregate of 2,895 miles to Colville, and 3,285 miles to forks of Thompson's and Frazer's rivers; of which only 480 miles are by land to the first point, and 790 to the second point.

*St. Louis by South pass to Colville, and forks of Thompson's and Frazer's rivers.*

St. Louis to St. Joseph..... 480 miles.

St. Joseph to New Fort Walla-Walla..... 1,730 “

New Fort Walla-Walla to Colville..... 180 “

Colville to forks Thompson's and Frazer's  
rivers..... 200 “

or 480 miles by water, and 2,200 by land.

*St. Louis by Northern pass to Seattle.*

St. Louis to Fort Benton..... 2,415 miles.

Fort Benton to Seattle..... 720 “

*St. Louis by South pass to Seattle.*

St. Louis to St. Joseph..... 480 miles.

St. Joseph to old Fort Walla-Walla..... 1,755 “

Old Fort Walla-Walla to Seattle..... 240 “

or 480 miles by water, and 1,999 by land.

But it is practicable to follow the route of Clark's fork to Colville, and make use of a reach of its navigable waters.

The river from Horse Plain to below the Pend d'Oreille lake, is navigable by boats and steamers.

Recollect that here we have those rich gold mines to which I have referred.

The distances from Fort Benton to Colville, by the route of Clark's fork, are as follows:

Fort Benton to Horse Plain, by cut-off from Blackfoot valley to the Jocko tributary of Clark's fork...	270½	miles by land.
Thence down Clark's fork to old Pend d'Oreille mission .....	195	“ by water.
Thence by land to Colville.....	60	“ by land.
or 330½ miles by land, and 195 by water.		

Steamers drawing from twenty to twenty-four inches of water, can run on a reach of eighty miles of this distance in low water, and a much longer portion of it in high water. There are two short portages on the remaining portion of the distance at low water.

I have probably gone into this question of comparative distances at this time with sufficient detail.

I wish now to make a few remarks as to the practicability of railroad routes north of the 49th parallel.

If you will look at the map, you will see that Seattle is the easternmost point, of all the harbors of that system of waters in American and British territory on the northwest, which have an entrance to the ocean by the Straits of San Juan de Fuca; that north of Seattle the coast tends somewhat rapidly westward; so that, assuming either St. Paul's or the western end of Lake Superior as the eastern terminus, the air-line to any harbor north of Seattle will be longer than an air-line to Seattle. It is obvious also from the inspection of the map, that to reach the base of the Rocky mountains, the course must be longer than to reach the base of the mountain by the route of the forty-seventh parallel, for the air-lines are longer, and it is not possible, from the course of the streams, that there is less deflection from a straight line. The very first link from St. Paul's to



Pembina gives a greater northern deflection from the course than any by the northern route.

The air-line distances from the base of the mountains, in the neighborhood of the Saskatchewan, to any part of British Columbia, will be longer than those from the base of the Rocky mountains, in the forty-seventh and forty-eighth parallels, to Seattle.

The following table gives the air-line distances from Superior City and St. Paul's to Seattle, on Puget's sound, Vancouver, on the Columbia river, Fort Benton and Pembina; from Fort Benton, to Seattle and Vancouver; from Edmonton to Pembina, and the mouths of Frazer's and Salmon rivers, in British Columbia. Salmon river was struck by Sir Alexander McKensie, in his trip to the Pacific, in 1793:

	Seattle.	Van- couver.	Fort Benton.	Pembina.	Mo. of Frazer R.	Mo. of Salmon R.
Superior City.	1,412	1,455	867	276		
St. Paul's.....	1,403	1,435	859	339		
Fort Benton..	545	592				
Edmonton .....				767	540	646
Pembina .....					1,176	1,377

From which we deduce the following facts: The air-line distance from Superior City to Fort Benton, is 867 miles, against 1,043 miles from Superior City, via Pembina, to Edmonton; from St. Paul to Fort Benton 859 miles, against 1,106 from St. Paul, via Pembina, to Edmonton; and that the air-line distances from Fort Benton, to Seattle and Vancouver are respectively 545 and 592, against 540 and 646—the air-line distances from Edmonton to the mouths of Frazer's, and Salmon rivers. The air-line distances from Superior City and St. Paul's, via Fort Benton, to Seattle, are 1,412 and 1,404 miles, against 1,646 and 1,752 miles—the air-line distances from St. Paul's, via Pembina and Edmonton, to the mouths of Frazer's and Salmon rivers, and against

1,583, and 1,689 miles, the air-line distances from Superior City, via Pembina and Edmonton, to the mouths of Frazer's, and Salmon rivers.

Thus, the air-line distances from St. Paul's and Superior City to the Pacific, are from 171 to 348 miles shorter by the route of the 47th parallel, than by the routes through British Columbia and the Saskatchewan.

Consider the course of the rivers on the route of the forty-seventh and forty-eighth parallels. Look at the Missouri and Clark's fork, look at the general course of the Spokane, Bitter Root, and St. Regis de Borgia rivers, and see how, by careful exploration, a nearly due east and west connection has been made, between the Flathead country and the great plain of the Columbia. This interior plain enables us to lay a comparatively straight line across it, from the mountain region of the Bitter Root, to the Cascade mountains. Can it be so in British Columbia? The streams run nearly north and south, and are separated by high mountain spurs. If use is made of the Kootenay pass, then the route must either go south of the 49th parallel, or it must cross the dividing ridge between the Kootenay and the main Columbia, giving one more chain to cross than the route by the Athabasca portage.

It is not possible that a course can be laid across the streams and dividing ridges from the base of the mountain passes north of the 49th parallel, which, starting from Lake Superior and St. Paul's, will not be several hundred miles longer than the northern route. These are obvious and natural inferences, drawn from what we know of the geography of the country. We cannot speak positively as to what pass the British route will cross. I understand that Col. Paliser, in the service of the British government, crossed the Kootenay pass the last summer on his way to the Pacific, charged with an exploration of the country.

The following table gives the sailing distances from the

principal ports of Asia to those of our western coast; from which it will be seen, that Seattle's average distance from the ports of Asia is twenty-five miles less than Vancouver's, sixty-three miles less than San Francisco, 368 miles less than San Diego, and sixty-five miles less than Mazatlan. As regards the four ports, the mouth of the Amoor, Shanghae, Canton, and Calcutta, the average distances are respectively 54, 206, 532, 1,212 miles less than to the other ports.

	To Seattle, miles—	To Vancouver, miles—	To San Francisco, miles—	To San Diego, miles—	To Mazatlan, miles—
From Amoor.....	3,850	3,895	4,110	4,520	5,390
From Shanghae.....	5,140	5,215	5,430	5,830	6,700
From Canton .....	5,900	5,975	6,140	6,550	7,380
From Calcutta.....	8,730	8,805	8,970	9,380	10,210
From Melbourne.....	7,280	7,205	6,930	6,990	7,125
From Sandwich Is...	2,380	2,305	2,050	2,190	2,835
Average distances....	5,542	5,567	5,605	5,910	6,607

If we look to European connections, the following table gives the distances from Liverpool, Havre, and Bremen, to Halifax, St. John's, Portland, Boston, and New York:

	To Halifax.	To St. John's.	To Portland.	To Boston.	To New York.
From Liverpool.....	2,430	1,960	2,750	2,800	2,970
“ Havre .....	2,540	2,070	2,860	2,910	3,080
“ Bremen .....	3,080	2,610	3,400	3,450	3,620

There is a scheme on foot of a railroad communication from both Halifax and St. John's to Quebec. The distance

from Halifax to Quebec will be 635 miles, and from Montreal 803 miles, and from St. John's to Quebec about the same distance; making the entire distance by railroad, from Western connections, 511 miles shorter to Portland than to Halifax and St. John's. This great increase of distance cannot compensate for the less ocean distance from the two British posts. We thus stand in this strong position; the great water-line of the lakes, and its system of canals and rivers, has the shortest railroad connections with American ports, both on the Pacific and Atlantic coasts; making Puget's Sound the great port for all seasons of the year, and Portland the winter port of the Canadas, and the depot for the business which will pass over the rail at all seasons of the year.

Mr. President, I did not suppose, when I entered upon this subject, that I should occupy so much time. There are other subjects that I desire much to dwell upon, in regard to which I have made a most careful examination. Since I accepted the invitation of your committee to address your society on the subject of the Northwest, I have endeavored to exhaust all existing information respecting the climate of this great region of country.

I will refer for a single moment to the isothermal lines laid down upon this map.

In constructing this isothermal map, the curves have not been reduced to the level of the sea, but have been laid on the natural surface of the ground. They have been deduced from the observations of temperature brought down to the present time. This method, though not strictly correct, will be near enough for practical purposes. The rolling character of a country will make it impossible to arrive at perfect accuracy in establishing the isothermal curves of the natural surface. But it is not probable that the error in any case will exceed one degree.

The altitudes of important points, as the passes of the Rocky, Bitter Root, Cascade, and Sierra Nevada mount-

ains; important key points, as Fort Union, Fort Benton, Fort Laramie, Salt Lake, Cantonment Stevens, of the large valleys and prairies, are laid down.

To construct the isothermal chart reduced to the level of the sea, the result of observations at a given point are modified by the formula that every one thousand feet in altitude is equivalent to a difference of three degrees in temperature. Thus an increase of three degrees for every thousand feet of altitude will, applied to the several points named, furnish data by which the isothermal curves reduced to the level of the sea can be constructed.

Let me call your attention to the remarkable fact, that as you go westward from the Mississippi the climate rapidly becomes milder; that though the Missouri river takes a great course northward, the mean winter temperature of Fort Benton is ten degrees higher than Fort Pierre, though the latter is more than 1,000 feet lower, and three degrees further south than the former. The climate of the western coast, is very similar to that of the western coast of Europe.

Examine, Mr. President, for one moment, that country stretching from Wisconsin through Minnesota to the Red river of the North, through which American, and English, and Canadian capitalists are now projecting great lines of railroad communication to reach British Columbia. And unless the Congress of the United States can cease its discussions, and venture upon action, even our people in the Northwest will, in self-defence, have to join hands with the Canadas, that they may have a passage to the Pacific, even though it be on British soil, and cause to grow up a great commercial and controlling British port on the western coast. These facts are full of significance. They should dissipate doubts, and impress us with the importance of rising up to the height of this great argument, and with faith and steadiness enter upon, and accomplish the work of binding together the shores of our great oceans.

## APPENDIX.

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The following table gives the lines in detail, and on several routes, as regards some of the most important ports. The least distance has been in each case taken.

### SHORTEST TRAVELLED ROUTES.

#### RAILWAY ROUTES.

##### *Portland, Me., to St. Paul's, Minnesota.*

Grand Trunk Railroad—Portland to Montreal..	292 miles.
Montreal to Toronto...	333
*Toronto to Sarnia.....	180
Detroit and Milwaukie Railroad—*Sarnia to Grand Haven.....	280
Grand Haven steamers—Grand Haven to Mil- waukie .....	75
La Crosse and Milwaukie Railroad—*Milwaukie to St. Paul's.....	325
	—— 1,485

##### *Portland to St. Louis.*

Portland to Montreal .....	292
Montreal to Toronto .....	333
Toronto to Hamilton.....	38
Hamilton to Windsor.....	186
Detroit to Lake Station .....	260
Lake Station to Joliet .....	45
Joliet to St. Louis.....	245
	——
St. Louis to Portland.....	1,399

*New York to St. Paul's, via*

Hudson River Railroad—New York to Albany..	144 miles.
New York Central—Albany to N. Falls.....	305
Great Western Canal—N. Falls to Detroit or Windsor.....	229
Michigan Central—Detroit to Chicago.....	284
Chicago, St. Paul's and F. D. L. Railroad— *Chicago to St. Paul's.....	400
	— 1,362

*Boston to St. Louis, via Chicago.*

As above—Boston to Chicago.....	1,018
Chicago and St. Louis—Chicago to St. Louis..	256
	— 1,264
<i>New York to St. Louis, as above.....</i>	<i>1,208</i>

*Boston to St. Paul's.*

Western Railway—Boston to Albany.....	200
As above—Albany to St. Paul's.....	1,218
	— 1,488

*Philadelphia to St. Paul's, via*

Pennsylvania Central—Philadelphia to Pittsburg.....	353
Pittsburg, Fort Wayne and Chicago—Pittsburg to Chicago.....	471
Chicago, St. Paul's and F. D. L.—*Chicago to St. Paul's.....	400
	— 1,224

*Baltimore to St. Paul's, via*

Northern Central—Baltimore to Harrisburg...	84
Pennsylvania Central—Harrisburg to Pittsburg.	247
As above—Pittsburg to St. Paul's.....	871
	— 1,202

*Washington to St. Paul's, via*

Baltimore & Ohio—Washington to Baltimore.	38
Baltimore to St. Paul's...	1,202
	— 1,240

Philadelphia to Chicago, as above.....	824 miles.
Baltimore to Chicago       “ .....	802
Washington to Chicago     “ .....	840

*Charleston to St. Louis, via*

South Carolina Railroad and C.—Charleston to Chattanooga .....	446
Memphis and Charleston—Chattanooga to Cor- inth .....	217
Mobile and Ohio—*Corinth to Cairo.....	175
Illinois Central—Cairo to Sandoval.....	114
Ohio and Mississippi—Sandoval to St. Louis...	61
————	1,013

*Charleston to St. Paul's, via*

As above—Charleston to Cairo.....	838
Illinois Central—Cairo to Dunlieth.....	451
Mississippi River—Dunlieth to St. Paul's .....	275
————	1,564

*New York to St. Louis via Dunkirk and Indianapolis.*

New York and Erie Railroad—New York to Dunkirk.....	469
Lake Shore—Dunkirk to Cleveland.....	143
Cleveland, Columbus and Cincinnati—Cleveland Crest line.....	67
Indiana and Bellefontaine—Crest line to In- dianapolis.....	206
Terre Haute and Richmond—Indianapolis to Terre Haute.....	73
Terre Haute and St. Louis—Terre Haute to St. Louis.....	183
————	1,141

*New York to St. Louis via Philadelphia.*

New Jersey Railroad and Transportation Com- pany—New York to Philadelphia.....	93
Pennsylvania Central—Philadelphia to Pitts- burg.....	353



Cleveland and Pittsburg—Pittsburg to Wheeling.....	93 miles.
Central Ohio—Wheeling to Columbus.....	141
Columbus and Xenia—Columbus to Xenia....	55
Indiana Central—Xenia to Indianapolis.....	124
As above—Indianapolis to St. Louis.....	256
—	1,115

*Philadelphia to St. Louis, as above.....* 1,022

*New York to St. Louis via Baltimore and Ohio, Marietta and Cincinnati, and Ohio and Mississippi Railroad.*

As above—New York to Philadelphia.....	93
Philadelphia, Wilmington and Baltimore— Philadelphia to Baltimore.....	98
Baltimore and Ohio—Baltimore to Marietta...	383
Ohio and Mississippi—Cincinnati to St. Louis.	340
—	1,114

Baltimore to St. Louis, as above ..... 923

Washington “ “ ..... 943

*Savannah to St. Louis, via*

Georgia Railroad—Savannah to Chattanooga..	431
As above—Chattanooga to St. Louis.....	567
—	998
Savannah to St. Paul's, as before.....	1,549
Savannah to Chicago “ .....	1,178
Charleston to Chicago “ .....	1,193

*Mobile to Chicago, via*

Mobile and Ohio—*Mobile to Cairo.....	540
Cairo to Chicago.....	355
—	895
Mobile to St. Louis, as before.....	715

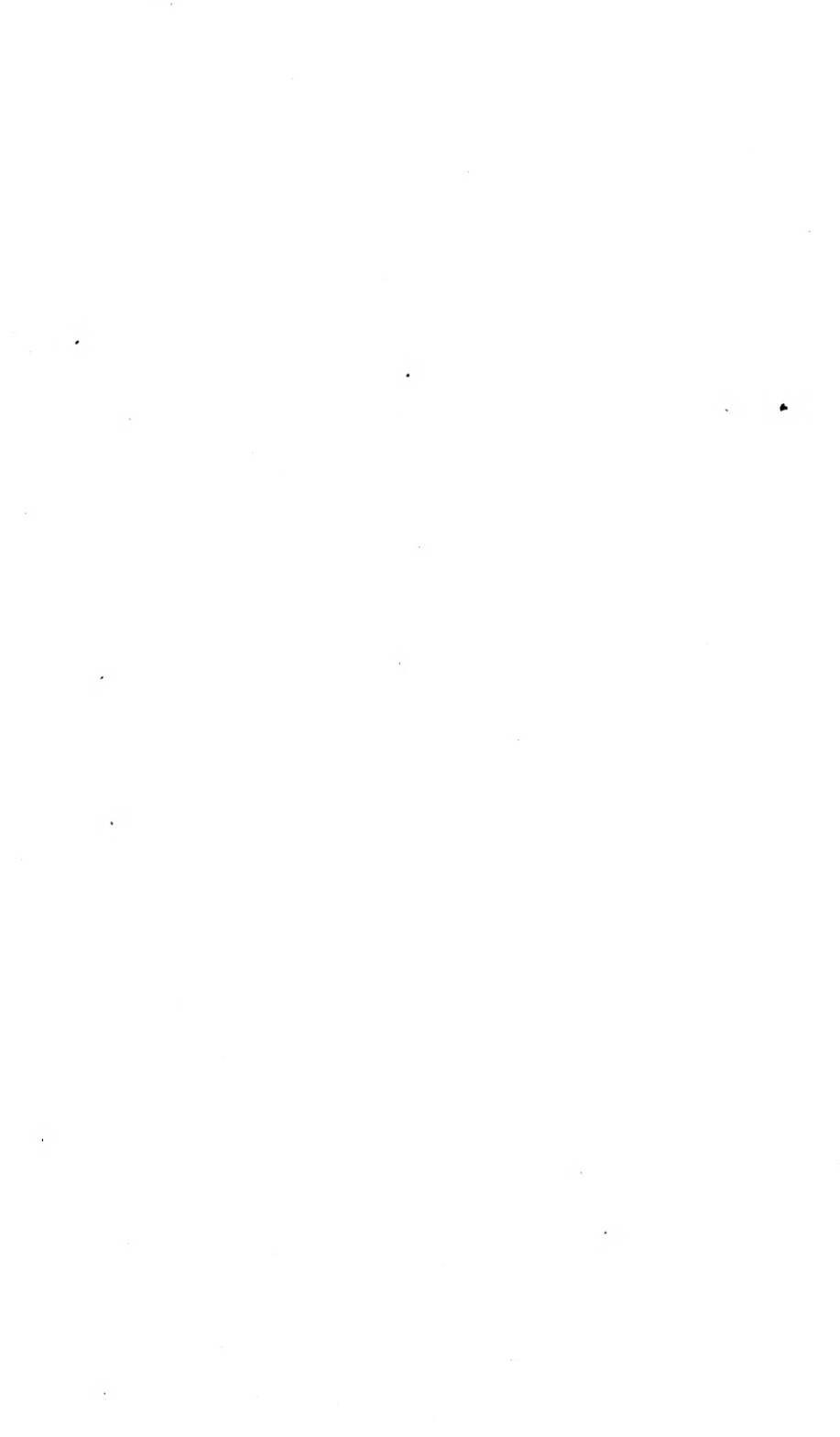
*Mobile to St. Paul, via*

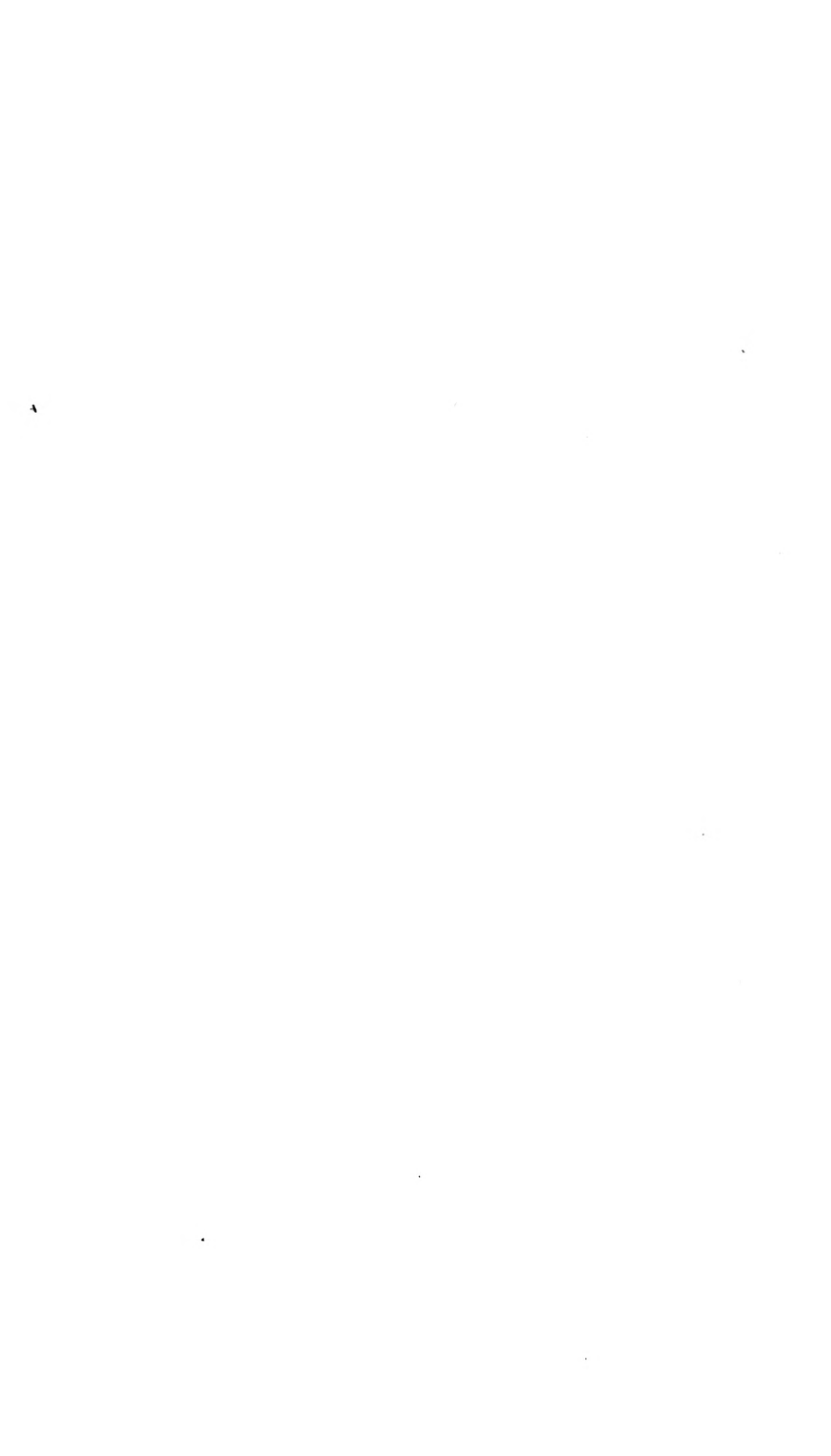
Mobile and Ohio—*Mobile to Cairo.....	540
Illinois Central—Cairo to Dunlieth.....	451
Mississippi river—Dunlieth to St. Paul's.....	275
—	1,266

*New Orleans to St. Louis, via*

N. O. I. and G. N. Miss. C. and M. O. R. R.—

*New Orleans to Cairo.....	625 miles.	
As above—Cairo to St. Louis.....	175	
	—	800
New Orleans to Chicago, as above.....	980	
New Orleans to St. Paul's, as above.....	1,351	

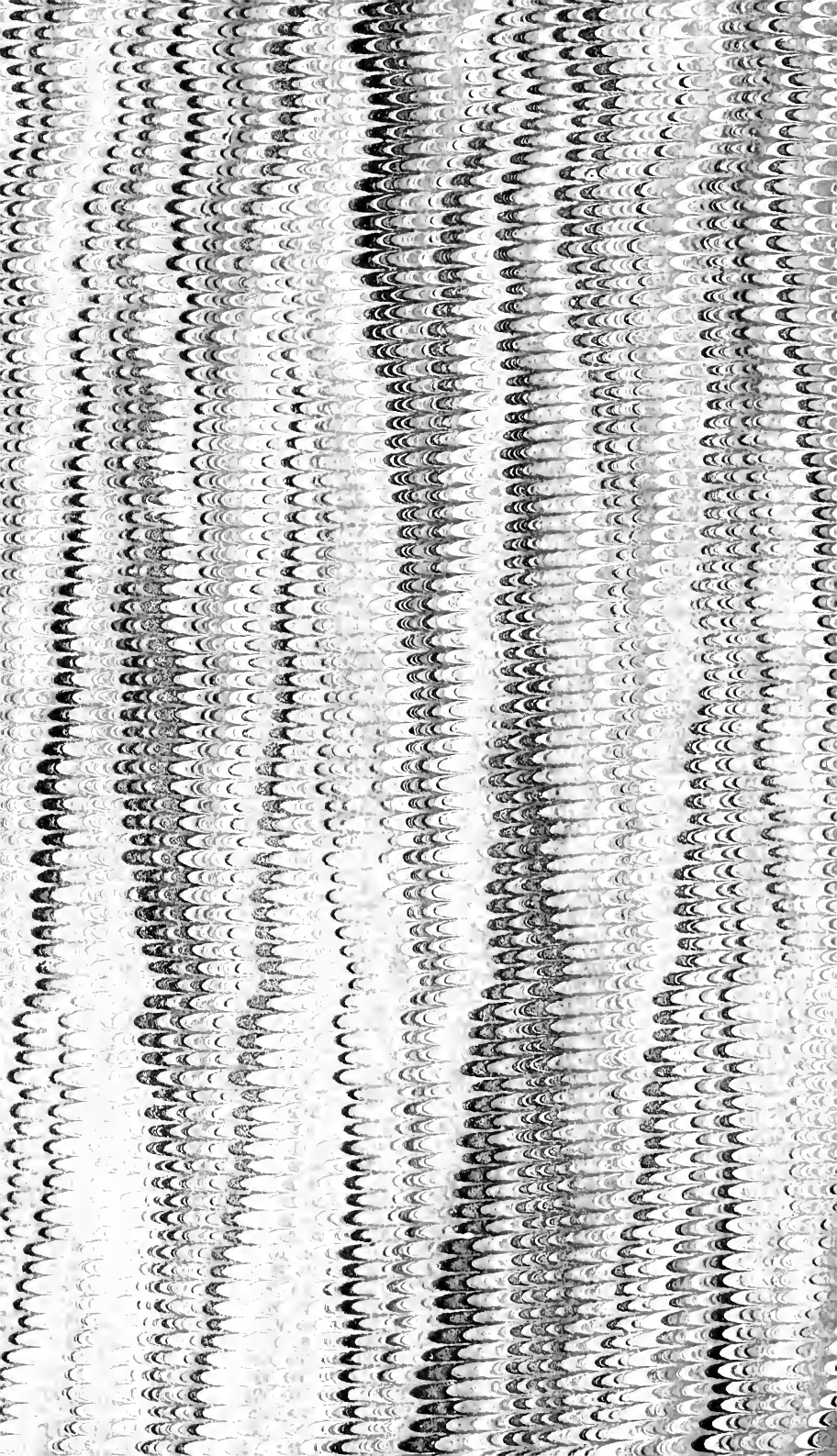




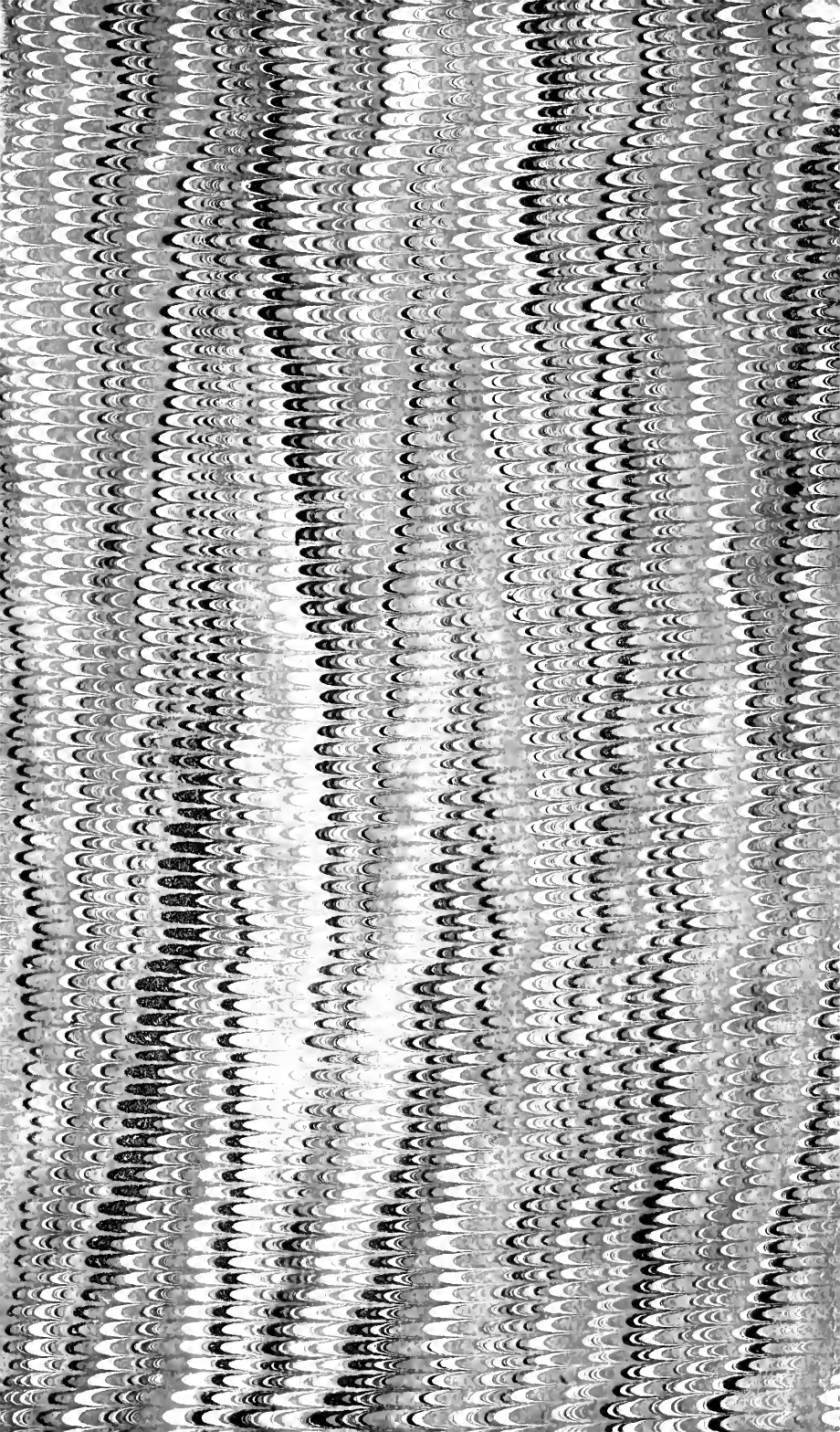












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